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ABSTRACT

This booklet is for individuals who are interested in learning more about the process of problem-solving. It provides information and sample tools, charts, and suggestions to assist in problem-solving efforts. The first section is about the nature of the problem-solving process. Then the five steps of problem-solving--(1) focusing on the problem, (2) searching for alternatives, (3) planning for action, (4) carrying out the plan, and (5) assessing the results--are discussed in some detail. (Author/MLF)

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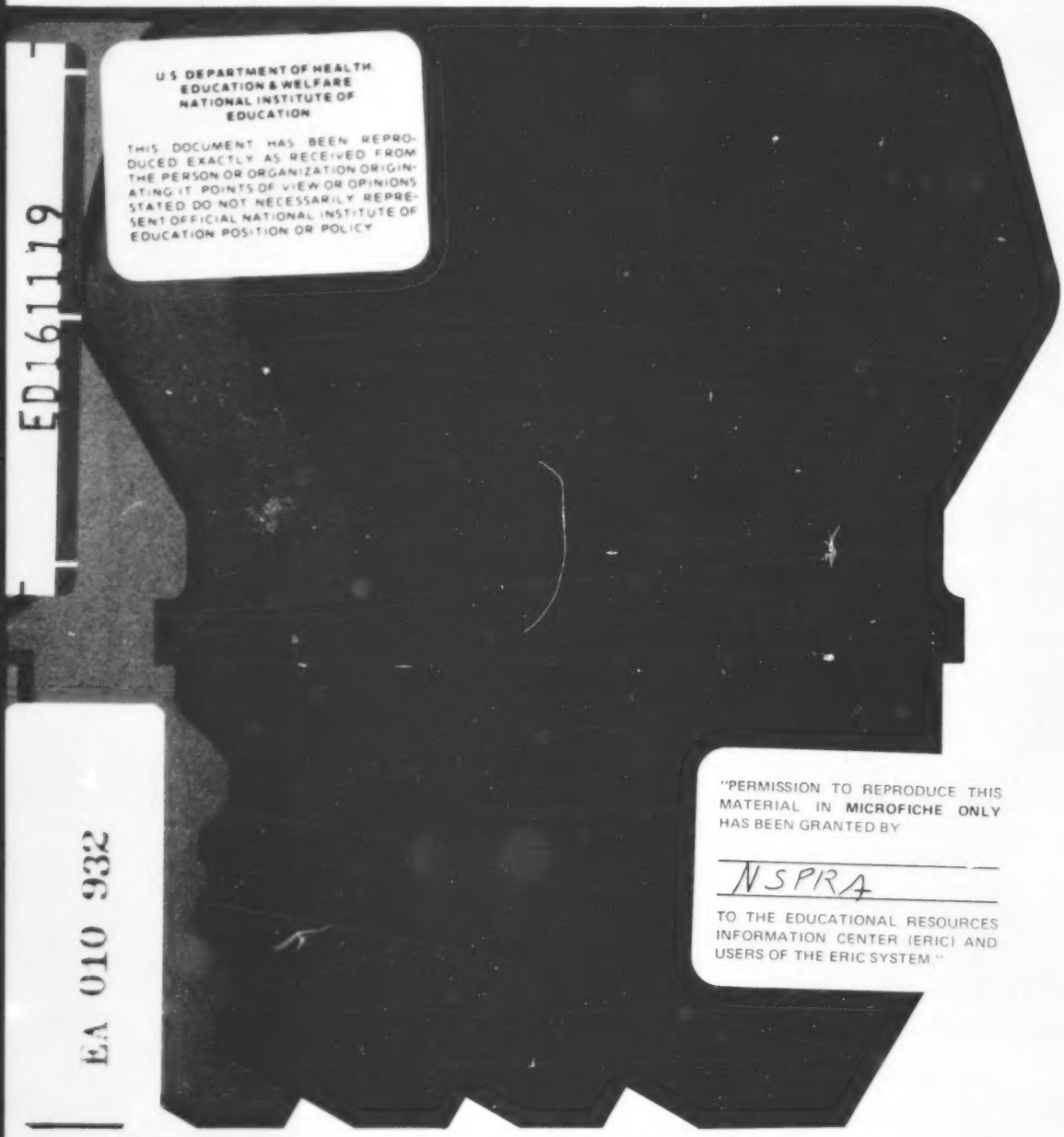

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KEYS TO COMMUNITY INVOLVEMENT

PROBLEM SOLVING. A FIVE-STEP MODEL

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ABOUT THE SERIES

Keys to Community Involvement is a series of booklets developed for governing boards, community leaders, group members, administrators and citizens. The booklets are designed to help these audiences strengthen their skills in group processes, work cooperatively with others, and plan and carry out new projects. Topics include techniques to maintain enthusiasm in a group, ways that agencies can effectively use consultants, and factors that affect introducing and implementing new projects.

The booklets are written by members of the Rural Education Program of the Northwest Regional Educational Laboratory. The Laboratory is a nonprofit, educational research and development corporation, headquartered in Portland, Oregon.

The booklets in the series are adapted from a much more comprehensive set of materials and training activities developed and field tested by the Northwest Regional Educational Laboratory over the past several years in dozens of locations throughout the western United States.

Information about other booklets in this series--titles and how to order--as well as information about related services--training, workshops and consultation--can be found on the inside and outside back covers of this booklet.

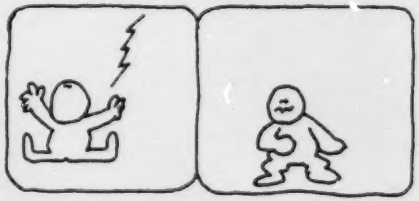
INTRODUCTION

This booklet is for individuals who are interested in learning more about the process of problem solving. It provides information and sample tools, charts and suggestions to assist you in your problem-solving efforts.

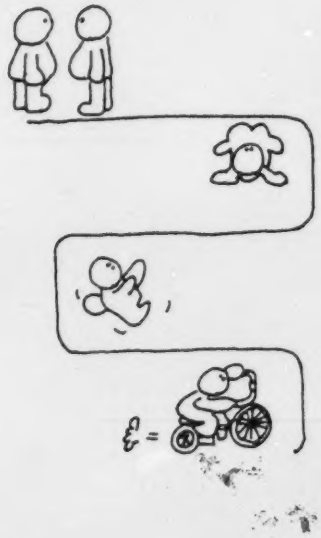
The first section is about the nature of the problem-solving process. Then each of the five steps of problem solving--1) focusing on the problem, 2) searching for alternatives, 3) planning for action, 4) carrying out the plan and 5) assessing the results--is discussed in some detail.

THE NATURE OF PROBLEM SOLVING

Individual or organizational problems vary in degrees of complexity and urgency. Some problems become apparent in a flash and require immediate attention. Others begin with a slow, uneasy feeling of



things not being quite "right." Sometimes problems are solved in a natural, easy flowing manner and sometimes under more stress.



Often, by solving one problem a person faces another. For example, think of the natural learning and problem solving that goes on for a child. When the child wants mobility, it learns to crawl. When that objective is met, the child sets a new goal--walking. Then the child turns to tricycles, bicycles and so on. One problem solved leads to another.

Often there are problems within problems. For example, many school personnel place importance on the value of high reading scores. When the scores are far below the national average, people recognize that the school has a problem. In other words, the ideal situation (high reading scores) is not the way things are right now (low reading scores). In order to reach the goal or solve the problem, the staff may encounter a number of related problems. For example, they may discover that the reading teachers have not received any training for the past five years. They may discover that no funds have been allocated for the purchase of new reading materials since 1965. Furthermore, they might find out that there are no funds available. Perhaps it is pointed out that students have had to share materials such as workbooks and thus have been less actively involved in learning reading. And so on.

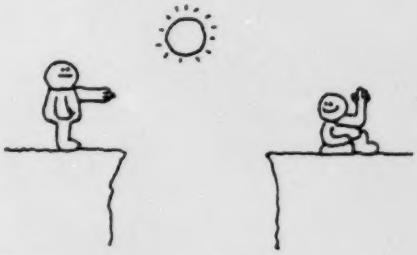
By identifying and working through one problem, people become aware of other problems, all related to the first problem.

The examples serve to point out the relationship between goals and problems. Some people prefer to talk about goals ("a positive approach," they say), others about problems ("everybody has problems, so why not admit it"). All goals reflect implicit problems, and all problems reflect implicit goals.

The situation represents the people, actions, resources, and conflicts at the present time. It is "where you are."

The goal represents your needs, which determine how you want the future to be. It is "where you want to be."

The problem is the gap between where you currently are and where you want to be. When you are certain about where you are, know where you want to go and can identify what you need to do in order to reach your goal, you are engaged in a problem-solving process.



The steps of the process itself have been given numerous names, and the number of steps often varies.

The five problem-solving labels used in this booklet are:

- Focusing on the Problem--Define the Situation
- Searching for Alternatives--Examine Various Solutions
- Planning for Action--Decide How to Proceed

- Carrying Out the Plan--Do It
- Assessing the Results--Evaluate the Project and Process

Generally, the nature of problem solving can be summed up as follows:

- Problem solving is a natural human process.
- Problem solving is cyclical, one problem solved leads to another.
- Small problems often appear within larger problems.

The remainder of this booklet describes a five-step problem-solving model.

STEP 1: FOCUSING ON THE PROBLEM

RECOGNIZING THAT A PROBLEM EXISTS

A problem surfaces in an organization the same way it surfaces in your personal life. Something doesn't feel right. When you try to accomplish a task, something gets in the way.

If you are able to identify a problem that most everybody agrees needs to be settled, and it is within the realm of your skills, resources and power, then you are well on your way to having the problem solved. If, however, you select a problem which few people are interested in or one that seems insurmountable, you are likely to get caught in a web of indecision and discouragement.

Problem solving clearly requires a common understanding of the problem. One group spent an hour hotly debating the value of three suggested solutions to "the problem" only to discover that members of the group had different views about the nature of the problem. It turned out that members were arguing about different solutions for different problems.

DEFINING THE PROBLEM

Establishing a clear understanding of the nature of the problem occurs as the problem is defined. There are four categories of questions you can ask in order to clarify the problem.

1. Who is affected by the problem? What individuals? In what way? What groups? In what way? Is the community at large affected by this problem?

2. What are the causes of the problem? What individual(s) could influence things differently? What changes in beliefs, attitudes, circumstances, rules, time, money, or other resources could cause things to be different? What group or organization could have an influence on things?

3. What kind of a problem is it? There are many ways to classify problems. The following considerations may prove helpful:

...lack of clarity or disagreement about goals

...lack of clarity or disagreement about the means of achieving goals

...lack of skills needed to carry out a particular means

...lack of material resources

...inaccurate communication

...insufficient time or conflicting schedules

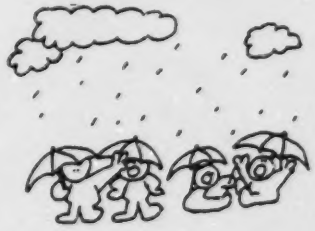
...conflict or lack of clarity about decision making (power struggles)

4. What do you want to improve? What will conditions be like when the problem is solved? What will you be doing? What will others be doing? What will the situation look like? How will you feel? What kinds of changes in time and space will occur?

TWO TECHNIQUES

When asking questions about a given problem, two techniques have proved successful: brainstorming and force-field analysis. These methods can be successfully used in any of the steps of problem solving--Brainstorming, for example, is an excellent way to generate alternative solutions to a problem. Force-field analysis can be used as a planning model. Both techniques are introduced early in this booklet so they are available for your use when appropriate.

Brainstorming. Brainstorming occurs when a group of people puts forth as many ideas as possible. It's a time of suspended judgment; no criticism; rampant creativity. The idea is to generate quantity, not necessarily quality. Nobody says,



"No."

"It will never work."

"That's a poor (good) idea."

"That's already been mentioned."

After the group has generated a list of alternatives, the group goes over the list and applies a critical and careful judgment.

Force-Field Analysis. This method identifies conditions that support and block attainment of the goal.

The problem is the gap between what is and what is desired. The conditions that preclude reaching the goal are called blocking forces. The supporting forces are the positive factors which move people closer toward the goal.

Use the following steps to conduct a force-field analysis:

1. Clearly state the goal or desired situation.
2. Identify the situation "as it is."
3. Brainstorm the forces which support goal attainment.
4. Brainstorm the forces which prevent you from changing the present situation.
5. List the blocking forces in order of the most significant obstacles.
6. Brainstorm possible solutions to this prioritized list of obstacles (search for alternatives).
7. Create an action plan based on the solutions generated (plan for action).

1. Statement of the goal:

2. The situation:

3. Forces For (SUPPORT)	4. Forces Against (BLOCKS)	5. Critical Blocks	6. Possible Solutions	7. Action Plan
Brainstorm forces for	Brainstorm forces against	Prioritize forces against	Brainstorm solutions to prioritized blocks	Write an action plan for the prioritized blocks, i.e., "In order to _____, we will: 1. 2. 3.

STEP 2: SEARCH FOR ALTERNATIVES

Why search for alternatives? What works well for one individual or group does not necessarily work well for the next. Therefore, it is wise to choose a solution that best suits your needs and that truly reflects the unique features of you or your organization.

Implementing a solution without examining several options is likely to lead to dissatisfaction. By examining alternatives, individuals can base their decision on a thorough awareness of the strengths and weaknesses of any proposal.

A search for alternatives provides an opportunity for people to gather information, work together, communicate and establish an atmosphere in which differences of opinion are welcomed and respected.

Searching for alternatives can be provocative, as well as fun. However, it is important to remain clear about the purpose of your search and to establish a definite termination point for it. This will increase the likelihood that your efforts will be productive and satisfying.

The following four steps will help you conduct a search:

- Define the search problem.
- Define the search methods.
- Compile the information.
- Make a selection.

DEFINE THE SEARCH PROBLEM *

Get a clear idea of the kind of information you need. Establish criteria against which alternatives will be judged. Answers to the following questions will help establish criteria.

- Who will use the information?
- Where? When? How? With what limitations?

Will your search be best accomplished by reading and reviewing written materials, talking with and observing other people or situations or some combination of these?

* For a more detailed discussion of the search phase, see the *Keys to Community Involvement* Series Booklet 12, "Finding the 'Right' Information: A Search Strategy."

DEFINE THE SEARCH METHODS

Individuals and groups sometimes look for sophisticated solutions to a problem. Generally, the simple, straightforward approach produces the best information. Defining the search methods means that you identify and locate the sources that can answer the search question. To determine the appropriate resources and facilities you should consider:

- human resources, such as the number of people available and the kinds of skills and knowledge they bring to the task
- institutional resources, such as office space, special services, materials and money
- printed materials that are primarily tools for locating specific pieces of information such as bibliographies, catalogues, index files (sometimes called secondary sources)
- printed materials, such as books, magazines, pamphlets, etc. (Sometimes called primary sources)
- audio-visual materials such as films, tapes, records, slides and video tape recordings

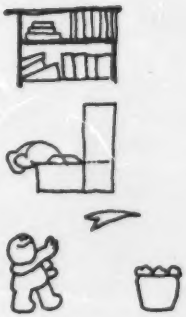
The search method should include consideration of internal as well as external resources. For example, members of your own group may have the knowledge, skill or material you need. On the other hand, you may need to go outside your group or community in order to get what you want. Brainstorming, using a simple chart like the one on the next page may be useful to identifying resources.

RESOURCES

	People	Places	Things
Local			
Outside			

COMPILE THE INFORMATION

Another aspect of search is to establish a system for managing the information which is collected or generated. On the one hand, guard against being overwhelmed by too much information presented in a disorganized way. On the other hand, have adequate information available from which to make a selection. Also, to be useful, data should be organized.



Keep the collected information accessible to others who may find it useful. The following chart suggests the kind of information to compile if you search printed materials, equipment, or personal experience.

If the information is about:	Then record:
1. Printed and audiovisual material	title, author, location and publisher where to order contents price
2. Equipment	name of equipment description of outstanding features manufacturer or distributor where to order price
3. Observations or an interview	who did the observation or interview who they talked to (name and position) address and phone number summary of what was said or observed materials obtained how information can be used

MAKE A SELECTION

Sooner or later, although you may feel certain that you've not checked <u>everything</u>, you need to complete your search and move from gathering information to sorting out and selecting material that fulfills the criteria established in the first step, defining the search problem.

A simple technique for making the selection is to construct a screening grid with the list of options down one side and several additional columns for ranking each option according to whatever criteria seem pertinent, such as the specific needs it meets, cost, feasibility, time, and so on, as illustrated below.

List of Various Options	Contribution to Goal	Cost	Feasibility	Time	Other Criteria
1.					
2.					
3.					
4.					
5.					

To summarize, when searching for alternatives one needs to clearly define the search problem, identify the search methods, collect information and make a selection.

STEP 3: PLANNING FOR ACTION *

Once a solution is chosen, plans for implementation need to be made. Often this is an appropriate time to review the outcomes of the previous steps--restate your goal, the present situation and the strategy for solving the problem.

A good "action plan" gives specific information about what will be done, who will do it, when it will be done, what materials will be needed and what outcomes are anticipated.

The tasks that need to be done should be listed in chronological order. The action plan should be recorded, and agreement and responsibilities should be clear. Of course, the plans may change as data about implementation of the plan are collected. This is a natural and expected aspect of problem solving. At every junction, however, agreements and responsibilities should be clearly understood, and any changes should be negotiated and communicated with everyone concerned.

A second aspect of Planning for Action is drawing up an evaluation plan. A good evaluation plan contains the following:

- the type of information that will be collected
- the method for collecting it
- who will collect the information

* See Booklet 4, "Planning for Change: Three Critical Elements."

- the resources available to carry out evaluation
- when, where, and how evaluation data will be used and shared

The evaluation plan should seek to answer these questions:

- Did the plan do what you wanted it to do?
- Did you accurately plan for time, money, person power, etc.?
- Were there any surprises?

STEP 4: CARRYING OUT THE PLAN *

Carrying out the plan means implementing the solution identified during the previous phase of problem solving. It involves DOING what you described in your "action plan." It's not so simple, however, as just following a blueprint or map. It is a developmental process changing and adapting as information becomes available.

Evaluation data are collected and used as a constant check on the effectiveness of the solution. This feedback should be shared with others affected by the plan.

As the plan of action is carried out, evaluation data may indicate that some modifications have to be made.

* See Booklet 7, "Innovative Projects: Making Them Standard Practice" and Booklet 8, "Successful Projects: Examining the Research."

Based on the study, Federal Programs Supporting Educational Change,[1] several elements of a successful project are presented for consideration. These elements are: continuous planning, group support, feeling of ownership of the project, adequate meeting time and on-going training.

CONTINUOUS PLANNING

As individuals and groups carry out the plan, new information and situations naturally arise. During this time, it is important to be flexible. Along with checking progress, it is important to reassess goals, objectives and procedures periodically. Your original thinking provides a well-organized base from which to begin, but the new information that is available during implementation permits more accurate planning as work progresses.

GROUP SUPPORT

When individuals or groups find themselves in a new situation, it is important to have other people's reinforcement. It is discouraging and frustrating to feel that you are alone with a problem. When people work together, providing mutual support, they find that they have more power as regards accomplishing their task. Group support is essential and is integral to open communication. One way to build this support is to keep all those concerned informed.

OWNERSHIP

A project is most likely to be successful if the people involved feel that it is their own and that they can influence its direction. This kind of ownership can be obtained by modifying and adapting plans to meet everyone's needs. Make changes to fit situations where the original materials or ideas don't seem to work.

ADEQUATE MEETING TIME

Meetings are times when information is shared about everyone's successes and failures in carrying out the plans. Naturally these meetings must be scheduled at times when as many people as possible can get together. Meetings provide a means of tracking progress and also a forum for identifying problems and issues. Well-planned meetings can result in renewed enthusiasm, commitment to the plans, and greater group cohesiveness and mutual support.

ON-GOING TRAINING

Some implementation plans will require initial training. In addition, on-going training has significant impact in ensuring success. Learning while doing keeps the training relevant to immediate needs.

Attention to these factors will not relieve the individual or group from the need to make initial or continuous plans, nor will it guarantee that everything hoped for will occur. What can be assured is that attention to these factors will increase productivity and satisfaction during the implementation phase. Smoother, more efficient operation is likely in terms of accomplishing the task, effective processes and group and intergroup relations.

STEP 5: ASSESSING THE RESULTS

Assessing the results occurs on two fronts. On one hand, project outcomes are evaluated in terms of whether or not the identified goals and objectives have been reached. The implemented solution is examined to see if it actually accomplished what it was meant to. Individuals or groups might ask themselves, "What needs to be done in terms of any unmet objectives?" Items to consider regarding the evaluation of project outcomes are outlined in Step 3, pp. 15-16.

In addition to an evaluation of project outcomes, it is also important to consider process outcomes; that is, determine whether the procedures used to solve the problem were productive and satisfying to those involved.

Three questions will be useful in the process evaluation:

1. What did we do?
2. How did we do it?
3. How do we feel about it?

Finally, individuals or groups determine whether or not they are ready to select and work on another problem. They plan to incorporate the knowledge, skills and experiences acquired the first time. Data that have been collected are used as a basis for making changes in the process. With the data taken into account, the individual, group or organization is ready to recycle--that is, they move on to another problem and begin the process again.

CONCLUSION

Problems are a natural and common part of living. This booklet outlines activities and procedures an individual or group can use to improve their problem solving efforts.

FOOTNOTE

1. Paul Berman and Milbrey McLaughlin, Federal Programs Supporting Educational Change, Vol. IV: The Findings in Review (Santa Monica, California: Rand 1589/4-HEW, April 1975).

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